SYNOPSIS

on

A STUDY ON KNOWLEDGE SHARING AND PERFORMANCE OF SELECTED INDIAN INSTITUTES

in

Pursuance of the requirements for the award of the degree of

DOCTOR OF PHILOSOPHY

Submitted by

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Dayalbagh, Agra – 282005

Introduction

In the 21st century, global economy is evolving as an economy of knowledge (Davenport et al. 2006). The success of society and economy will depends on how well they allow these precious assets to be created, shared and learned, so as to insert a new value from it. The management guru Peter Drucker has also acknowledged knowledge as a chief economic resource in an organization (Drucker 1993). In contrast to the material assets, which have been the usual basis for getting competitive advantages, knowledge is believed to be the most important resource a company can have (e.g., Grant 1996; Zander and Kogut 1995).

Knowledge sharing is a social communication culture, including the transfer of employee knowledge, experiences, and skills throughout the whole organization. It includes a set of shared understandings related to giving employees access to significant information and creating and using knowledge networks within organizations (Hogel et al. 2003). If properly applied by way of the cultural construction where employees are prepared and always share their knowledge, innovative ideas could be increased (Connelly and Kelloway, 2003). Moreover, knowledge sharing takes place at both the individual and organizational levels. For individual employees, knowledge sharing is conversing to colleagues to help them to get something done better, in less time, or more proficiently. For any organization, knowledge sharing is storing, organizing, reprocessing, and transmitting experience-based knowledge that exists within the organization and making that knowledge accessible to others in the business. A number of studies have expressed that knowledge sharing is necessary because it allows organizations to enhance performance and decrease unnecessary learning attempts stated by researchers like Calantone et. al., (2002) & Scarbrough (2003).

The study of knowledge sharing is governed by those focusing on knowledge sharing activity within the business organizations. Obviously, the definitive goal of organizational knowledge sharing in these institutions is profit-inspired. However, the matter of knowledge sharing is equally important for a knowledge-based institution, such as a university or colleges, where knowledge invention, delivery and application are established in the institution. The impact of knowledge sharing could be more than those generated by the business organizations

nevertheless there is no direct approach to measure the result of knowledge sharing in knowledge institutions said Cheng et al. (2008).

Nowadays, universities face new challenges and opportunities due to globalization and the improvement of new technology such as the internet and e-learning. Demands of students and lecturers have changed and they expect to be able to use new technology for research. Faculties and students are more mobile than ever before also the demand for research and training has increased. Universities should be able to compete in the global environment, as well as attracting international students and fulfilling new needs. They should participate comfortably in a knowledge-based economy and society (Khosravi et al. 2014). The main output of universities is research results and new knowledge that should be managed by using knowledge-management techniques. Knowledge-sharing and transfer in universities between faculty members is essential for universities, as it can reduce the budget and provide a reasonable way to do research. The key objective of universities is to improve faculties and students' skills and educate them to become proficient knowledge workers. Yet, the lack of efficiency and effectiveness in the supervision process is one of the challenges that universities face (Khosravi et al. 2014).

The essence of Human Resource Development is education, which plays a significant and remedial role in balancing the socio-economic fabric of the country. Since citizens of India are its most valuable resource, the billion-strong nation needs the nurture and care in the form of education to achieve a better quality of life. This warrants an all-round development of the citizens, which can be achieved by building strong foundations in education. Expansion, inclusion, and excellence along with equity and quality have been the overarching goals of the government in the education sector. Several new initiatives were taken up by the central government during the Eleventh Plan (2007-12). The emphasis has been on enhancing supply and increasing access to quality education. Consequently, the Indian higher education system is one of the largest in the world with over 600 universities and university level institutions and more than 33,000 institutes.

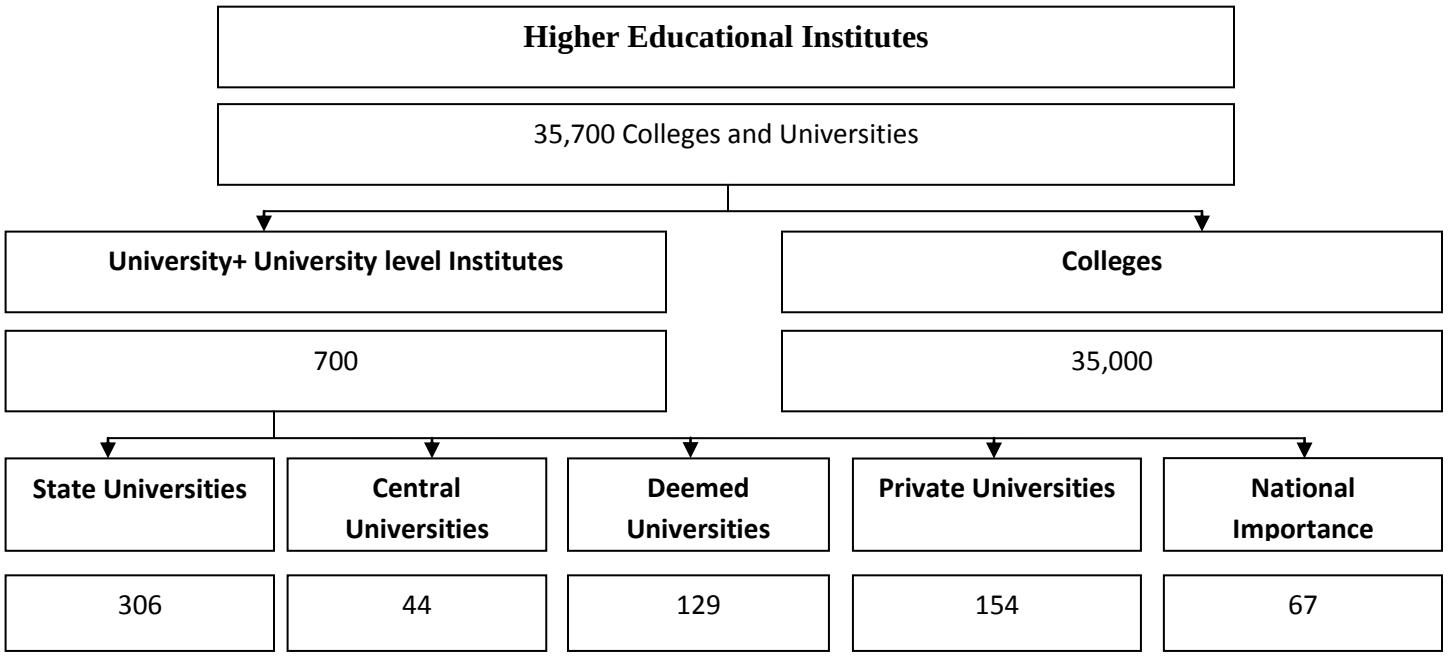
Knowledge sharing is visualized as an accepted activity of the academic institutions as the number of seminars, conferences and publications by academics is more than any other profession, indicating the willingness of academics to share knowledge (Cheng et. al.2008).

Therefore, this research study is an attempt to understand the knowledge sharing behavior among academics by focusing on business schools of India.

2. Higher Education in India: An Overview

Education in India is provided by the public sector as well as private sector, with control and funding coming from three levels: central, state and local. India's improved education system is often cited as one of the main contributors to the economic rise of India. Much of the progress, especially in higher education and scientific research, has been credited to various public institutions. The main governing body at the tertiary level is University Grants Commission (India), which enforces its standards, advices the government and helps coordinate between the centre and the state. Accreditation for higher learning is overseen by 12 autonomous institutions established by the University Grants Commission. In India, education system is reformed (Figure: 1).

Figure 1: Higher Education Institutions in India



Source: UGC Higher Education at a Glance - June, 2013

Higher education in India has witnessed an impressive growth and reforms over the years. The number of higher educational institutions (HEIs) has increased from about 30 universities and 695 colleges in 1950-51 to about 700 universities (as of 2012-13) and 35,000 colleges (as of 2011-12) as per a recent UGC report (Figure1, www.ugc.ac.in). With an annual enrolment of above 25 million (including enrolment under Open and Distance Learning system), India is today ranked as the third largest higher education system in the world after US and China.

In addition to the above universities, other institutions are granted the permission to autonomously award degrees, and while not called "university" by name, they act as such. They usually fall under the administrative control of the Department of Higher Education.

Table 1: Ranking of Top Ten Business schools of North India and Delhi & NCR

	Business Today		Topbschoolsinindia.com		Business World	
	North India	Delhi & NCR	North India	Delhi & NCR	North India	Delhi & NCR
FMS, Delhi	1	1	2	1	1	1
MDI, Gurgaon	2	2	3	2	3	3
IIFT, Delhi	3	3	4	3	5	5
IMI, Delhi	4	4	5	4	4	4
IMT, Ghaziabad	5	5	6	5	2	2
DMS, IIT, Delhi	6	6	9	7	7	7
BIMTECH, Greater Noida	7	7	7	6	-	-
LBSIM, Delhi	8	8	10	8	-	-
APIM, Delhi	10	9	17	9	-	-
Amity Business Schools, Noida	11	10	-	-	-	-

Source: http://businesstoday.intoday.in/story/indias-best-b- schools-in-numbers/1/199343.html, http://topbschoolsinindia.com/top-100-b- schools-in-india-2014-an-overall-ranking, http://www.businessworld.in/en/c/document_library/get_file?uuid=9acf6b44-8bf0-4598-b676-93e26cbc1da1&groupId=520986

In official documents they are called "autonomous bodies", "university-level institutions" or even simply "other central institutions". In India no national level university ranking system is yet setup to rank Business schools of the world and India as well. MHRD, held responsible the

incompatibility of criteria of world level ranking systems with Indian demographics for non-presence of Indian universities and Business schools in world level rankings. MHRD, after getting an approval from Govt. of India has setup a council of professors from IIT's to design and propose a ranking system which would appropriately rank Indian universities and Business schools as per Indian demographics (The Hindu, 18, Jan, 2014). The proposal is not yet passed, so rankings by various magazines will be considered for selection of Business schools for the purpose of this study. According to prestigious magazines and survey of India, top 100 Business school rankings published in 2013, by groups like Business today, Business world and topbschoolsinIndia.com,. 32 colleges are from north India and most of them are from Delhi and NCR. Therefore researcher will take Delhi and NCR as the area for study and data will be collected from academic staff of top 10 Business schools (Table: 1)

3. Literature Review

A number of studies have been conducted by researchers in India and abroad on isolated co-relates of organizational performance. But so far not much comprehensive study on Knowledge Sharing as co-relates of Institutional performance has been conducted, in Indian context. In the succeeding paragraph a brief review has been conducted to draw attention to the interpretation made by the earlier scholars on the above mentioned co-relates of Institutional performance.

3.1. Knowledge

Drucker (2012) describes knowledge as information that alters something or someone, Cited in Hasanzadeh, S., Sarkari, M., and Hasiri, A. (2014). Knowledge is the result of information. When information is analyzed, processed and situated in a situation, it turns into knowledge. Knowledge can be defined as information possessed in the minds of individual (Alavi & Leidner, 2001 Cited in Islam, M.S. and Khan, R.H., 2014). To some observers, knowledge has more value because it is nearer to action than are data and information (Cheng, 2000 Cited in Islam, M.S. and Khan, R.H., 2014). Knowledge can be measured from several viewpoints. It can be viewed as a state of mind, an object, a process, a condition of having access to information and an ability. About outlook on knowledge viewed as state of mind stresses that improving individual's own knowledge, so they can efficiently apply it to the organization's requirements. The objective perception about knowledge as a thing or object free of human action; in this case knowledge can

be stored, regained and manipulated. The third perception views knowledge as a process and stresses on applying proficiency. It assumes that knowledge does not exist independent of human action. The fourth view on knowledge viewed as a situation of access to information is an addition to the object view. This view argued that organizational knowledge must be arranged in a way that it is easy to access and recover. Finally, the outlook on knowledge viewed as ability builds on ability view and emphasizes that knowledge has a potential to influence future action (Wu and Zhu 2012 Cited in Kanaan, R., Masa'deh, R., and Gharibeh, A. H., 2013).

Iske and Boersma, 2005 Cited in Al-Alawi, A.I., Al-Marzooqi, N.Y., and Mohammed, Y.F., 2007, said that knowledge results from the communication of someone's insights like experience, instinct and attitude), imagination (creating new ideas and predicting futures) and information. Some researchers emphasized that Knowledge must not be confounded with data; data are unprocessed facts, dimensions and statistics, others say, knowledge is more complicated than information, information produced from arranging data into useful forms. Knowledge is the output of analyzing information based on ones understanding it is influenced by the individuality of its owner since it depends on judgment and perception; knowledge integrates attitude, behavior, and beliefs (Lee and Yang, 2000 Cited in Al-Alawi, A.I., Al-Marzooqi, N.Y., and Mohammed, Y.F., 2007). Knowledge is an essential resource for any organization and the basis for their performance and get competitive advantage (Nesheim and Gressgard, 2014 Cited in Hasanzadeh, S., Sarkari, M., and Hasiri, A., 2014).

3.2. Knowledge Sharing

According to Sharratt & Usoro (2003), the term 'knowledge sharing (KS)' means providing and collecting of information prearranged within a situation by the sources of knowledge, Cited in Islam & Khan (2014). KS is the process of jointly exchanging knowledge and mutually generating new knowledge stated by van den Hoff & de Ridder (2004). Other researchers describe it as a social contact culture, including the switching of employee knowledge, experiences, and skills throughout the whole department or organization. It is a set of shared considerations related to giving employees access to useful information, constructing and using knowledge systems within organizations, defined by researchers like Hogel et al. (2003); Calantone et al. (2002); Scarbrough (2003) and Cited in Lin (2007).

Ardichvill et al. (2003) discussed knowledge sharing as involving both the supply and the demand for new knowledge as Van den Hooff and Van Weenen (2004b) recognized two-dimension of knowledge sharing process which includes knowledge donating and knowledge collecting. According to Rahab, Sulistyandari and Sudjono, (2011), Knowledge collecting is explained as a mechanism or process to obtain information and knowledge from both inner and outer of firm while Knowledge donating is described as a mechanism to provide information and knowledge to other party whereas Jantunen, (2005) defines Knowledge donating as a process of individuals conversing their own intellectual capital to others, while knowledge collecting is the process of consulting associates to support them to share their intellectual capital (Cited in Lin, 2007) but at the same time many companies have identified that knowledge sharing is not a usual practice.

They have been disheartened in the fact that insights and experiences created in one division of the organization never arrive at other sections. Therefore, several organizations have launched some influences to encourage employees to share their knowledge. Many researcher recognize the existence of different influences on employee knowledge sharing activities, such as individual, organizational, and technology factors (Calantone et al., 2002; Scarbrough, 2003; Lee and Choi, 2003; Connelly and Kelloway, 2003; Taylor and Wright, 2004; Lin, 2007; Islam and Khan, 2014; Hejase et al.**,** 2014).

3.3. Factors Influencing Knowledge Sharing

Noor and Salim (2012), has talked about in their study that employees are rejected to share knowledge and many factors influencing knowledge sharing were recognized to solve this problem. Kumar and Rose, 2012, in the support said that knowledge sharing and various enablers work together to success knowledge sharing across the organization because knowledge management on their own cannot direct organization to success. According to Skyrme and Amindo (1997), firms face many difficulties when apply knowledge management systems, including a lack of management support, making knowledge useable, motivating employees to seek, accept, and agree to best industry practices, motivating employees to share knowledge and

rewards and recognition. Sáenz et al. (2012) argued that there is a need of research in this area, observing key antecedents influencing knowledge sharing and its impact on firm performance. Long et al. (2012) highlighted on Organizational Culture, Reward system and Leadership & management support where as Organizational culture, organizational structure and Information technology are the factors take by Kim and Lee 2006 & Noor and Salim (2011). Hejase et al.(2014) studied Human Factors, organizational factors and demographics and analyzed their impact on knowledge sharing where as Rahab et al. (2011) and Sliat & Alnsour (2013); taken Organizational factors & individual factors for research. Lee and Choi, 2003; Connelly and Kelloway, 2003; Taylor and Wright, 2004; Lin (2007); Cheng (2008); Abdallah, Khalil, and Divine (2012); Khosravi and ahmad (2012); Aris (2013); Noor & Salim (2012); Kanaan et al. (2013); Islam and khan (2014); has taken individual, organizational and technological factors as knowledge enablers. Therefore Researcher has taken individual, organization and technology factors for the study as these factors affecting knowledge sharing are frequently mentioned in literature by other researchers.

(i) Individual Factors

When researcher reviewed knowledge sharing literature, one of the biggest challenges in knowledge sharing can be seen to be in the field of the delivery of knowledge from one person to another in the right way and at the right time (Riege, 2005). Hence, thinking about individual behavior and attitude as an important part of the knowledge sharing process. Orlikowski (1992) cited in Khosravi and Ahmad (2013) states that people are at the mind of any alteration in the organization, so to consider the impact factors of knowledge sharing in research supervision, the individual factors of knowledge sharing are essential (Cited in Khosravi and Ahmad, 2013).

Individual factors (internal factors) are viewed from the individual personality such as beliefs, feelings and attitudes explained by Cheng *et al.* (2009) Cited in Khosravi and Ahmad (2013). According to Lin (2007), the result shows that individual factors extensively influence knowledge-sharing processes. Tohidinia and Mosakhani (2009), says research results indicate that individual factors had a great impact on Knowledge Sharing Process. Thus the following hypothesis is proposed:

H_1: Individual factors positively influence employee willingness to Knowledge Sharing.

The researcher considered here has focused on individual factors that encourage or slow down organizational knowledge sharing activities. The three factors that may be proximal determinants of knowledge sharing are identified: Cooperative Behavior, T-Shaped skills and knowledge self-efficacy.

Cooperative Behavior

Enjoying helping others or cooperative behavior is originated from the concept of altruism (Kankanhalli et al., 2005). People get pleasure and delight when they help others (Wasko and Faraj, 2000). Such achievement arises from their native enjoyment in cooperating with other (Constant et al.1994). Thus, Cooperative behavior is positively related to knowledge sharing (He and Wei, 2009; Hsu and Lin, 2008; Jarvenpaa and Staples, 2001; Shin et al., 2007; Wasko and Faraj, 2005). Knowledge workers may be motivated by relative cooperative behavior owning to their wish to help others (Constant et al., 1994; Davenport and Prusak, 1998).

Previous research intellectual search and solving problems is challenging or pleasurable, and because they enjoy helping others (Wasko and Faraj, 2000; Wasko and Faraj, 2005). Knowledge workers who get satisfaction from helping others may be more positive oriented toward knowledge sharing and more inclined to share knowledge. The following hypothesis thus is proposed:

H_{1a}. Co-operative behavior positively influences employee willingness to share knowledge.

T-Shaped Skills

T-shaped skills are both deep (the vertical part of the 'T") and broad (the horizontal part of the "T"); i.e., their holders can discover particular knowledge domains and their many applications in particular products (Leonard-Barton, 1995). For example, persons with T-shaped skills not only

have a deep knowledge of a discipline (like ceramic materials engineering), but also have proficiency with their discipline relates with other disciplines (such as polymer processing) (lansiti, 1993). People with T-shaped skills are really helpful for creating knowledge because they can combine various knowledge assets (Leonard-Barton, 1995). They have the skill both to unite theoretical and practical knowledge and to observe how their branch of knowledge interrelates with other branches. Therefore, they can develop their competency across numerous functional branch areas, and thus create new knowledge (Johannenssen, 1999, Madhavan and Grover, 1998).

T-shaped skills mean to the experts' capabilities that permit them to have significant and synergistic discussions with one another (Swap *et al*., 2001). Knowledge and competence can be obtained by admitting new people with advantageous skills (Stonehouse and Pemberton, 1999). In particular, T-shaped skills personified in employees that are most regularly associated with core capacity (lansiti, 1993; Leonard-Barton, 1995 Johannenssen, 1999). T-shaped skills may facilitate individual experts to have synergistic conversations with one another (Madhavan and Grover, 1998). Hence, the following hypothesis is proposed:

H_{1b}: T -Shaped skill positively influences employees to share knowledge.

Knowledge Self-efficacy

Knowledge Self-efficacy is defined as the decisions of individuals regarding their abilities to manage and execute lines of action required to get specific levels of performance (Bandura, 1986). Self-efficacy motivates employees to share knowledge with colleagues (Wasko and Faraj, 2005). Researchers have also found that employees with high competence in their ability to donate important knowledge are more likely to achieve particular tasks (Constant et al., 1994). Knowledge self-efficacy usually marked in people believing that their knowledge can help to get solution of job-related problems and improve work effectiveness (Luthans, 2003). Employees who believe that they can improve organizational performance by sharing knowledge will create

better positive willingness to both donate and collect knowledge. Hence, the following hypothesis is proposed:

H_{1c}: Knowledge Self-efficacy positively influences employee willingness to share knowledge.

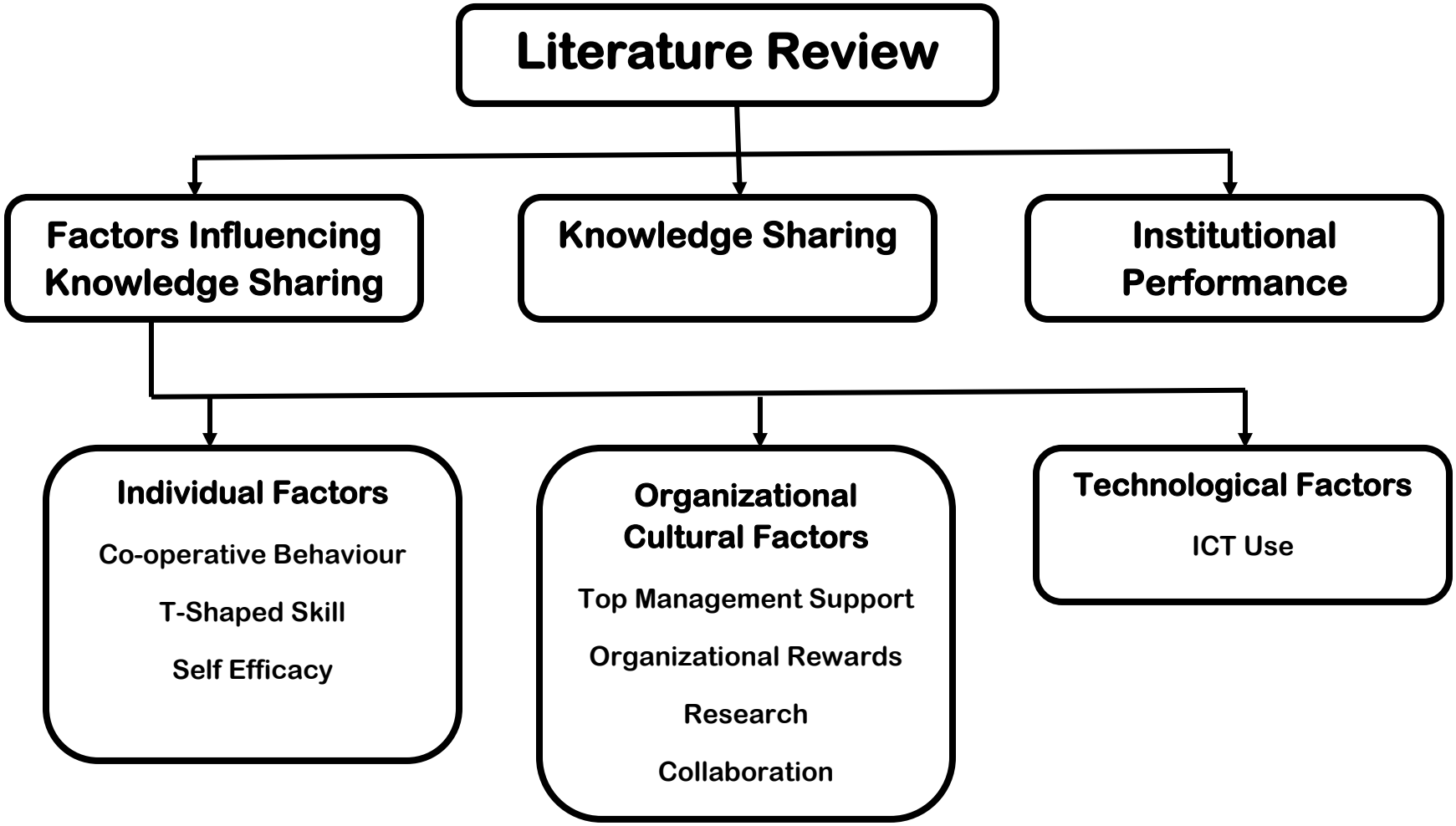
(ii) Organizational Factors

There are many ways for organizations to motivate and promote knowledge sharing. Knowledge exists in organizations; however, its existence does not guarantee its utilization. Organizations that don't manage their knowledge resources effectively will have less competitive advantage as compared to organizations that do (Davenport and Prusak 1998).

To make knowledge sharing more efficient, organizations have to produce a culture whereby knowledge sharing is encouraged and pleased (Forstenlechner and Lettice, 2007). Depending on this Sliat and Alnsour , 2013 can notice that the most important organizational factors that affect knowledge sharing behavior is the encouragement of employees, in other words the top management support and the organizational rewards system. Therefore, organizations are required to build and maintain the Top management support and Organizational reward (Lin 2007; Sliat and Alnsour , 2013), Research (Arokiasamy et.al, 2009 and Martin and Marion, 2005) and Collaborations ()that will support a knowledge sharing environment. Therefore the following Hypothesis can be formulated:

H_2: Organizational factors positively influence employee's willingness to share knowledge.

Figure 2: Literature Review at a Glance



Top Management Support

Top management support is believed as one of the important likely influences on organizational knowledge (Connelly and Kelloway, 2003). Various studies have found top management support necessary to create a encouraging climate and giving sufficient resources (Lin, 2006). MacNeil (2004) pointed out the importance of the noticeable top management's support to organizational knowledge sharing climate. Moreover, Lin and Lee (2004) suggested that the insight of top management support of knowledge sharing intentions is essential for developing and maintaining a positive knowledge sharing culture in an organization. Therefore, this study expects that top management support positively influences employee willingness to share knowledge with colleagues. The following hypothesis is therefore formulated:

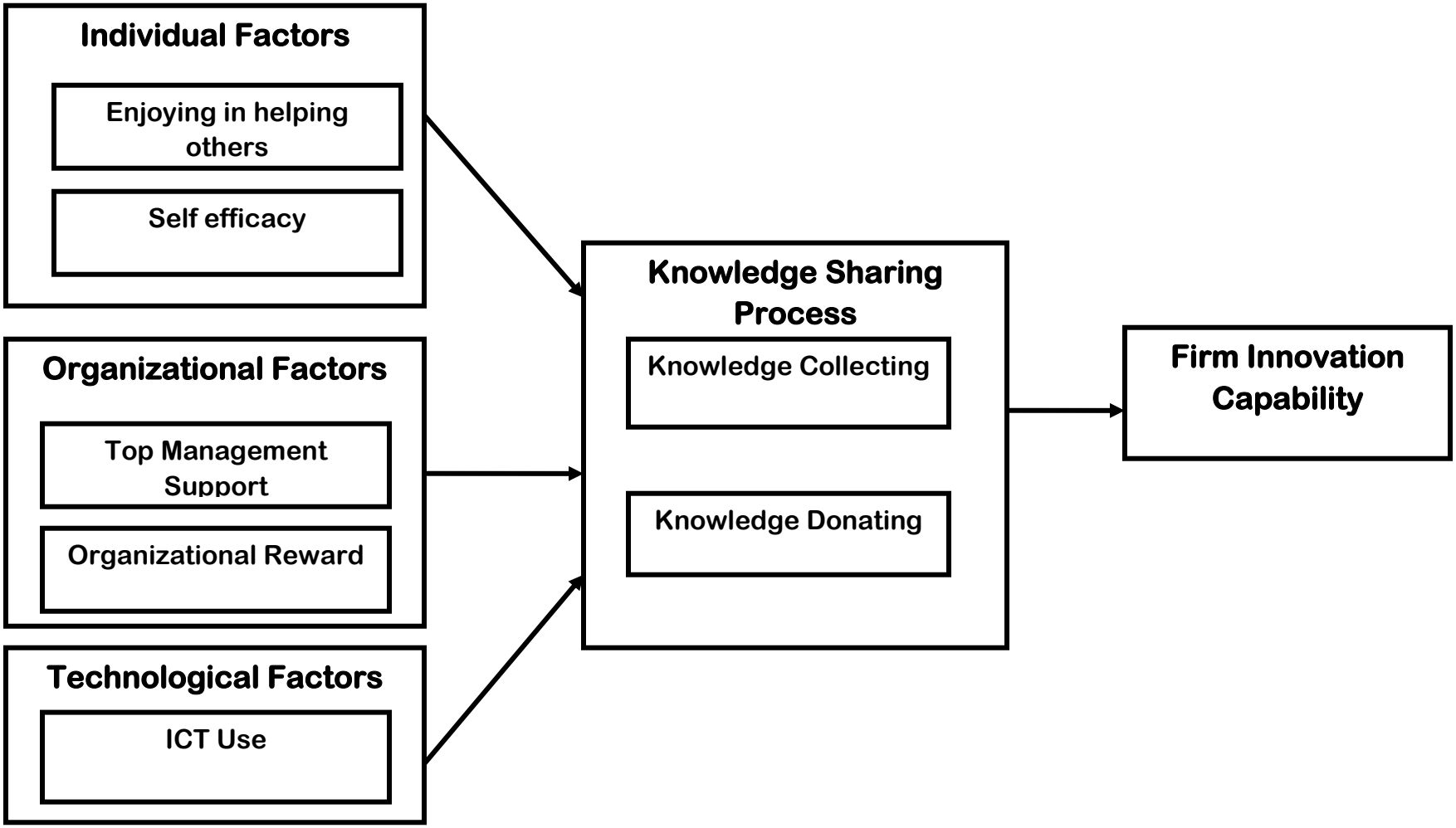
H_{2a}: Top management support positively influences employee willingness to knowledge sharing.

Organizational Rewards

Organizational rewards can vary from financial awards such as increased salary and bonuses to non-financial awards such as promotions and job protection (Davenport and Prusak, 1998; Hargadon, 1998). Numerous organizations have initiated reward systems to persuade employees to share their knowledge. For example, Buckman Laboratories recognizes through an annual conference at a resort its 100 top knowledge providers. Moreover, a division of IBM, Lotus Development, founds 25 per cent of the total performance estimation of its customer support workers on the area of their knowledge sharing activities (Bartol and Srivastava, 2002). Thus the study supposes that if employees consider they can get organizational rewards by presenting their knowledge, they would increase greater positive willingness to knowledge sharing. The following hypothesis is proposed:

H_{2b}: Organizational rewards positively influence employee willingness to Knowledge sharing.

Figure 3: Framework of Knowledge Sharing and Innovation Capability given by Lin (2007)



Source: Hsiu- Fen Lin (2007)

Research

Research is the path to innovation with a verified universal recognition that research shares positively to society efficiently. However, academicians at colleges faced the challenges in terms of creating exceptional research, making the college proud of them and better teaching quality becomes major barriers (Arokiasamy et.al, 2009). Knowledge sharing serves as a linkage between the individual knowledge, where the knowledge exists in and the organization where knowledge produces its economic and competitive gains. Colleges as Higher Education Institutes are platforms for academicians to talk of their ideas and insights (Martin and Marion, 2005). As a consequence, the research standing academicians work hard to developing better graduates through giving a positive teaching and research atmosphere. Even though, in the colleges' academicians are facing more than a few challenges in their career growth in terms of promoting research, they should not overlook their duty as knowledge provider to society. To be successful in research, it is really important for the colleges to facilitate suitable research sharing culture as it supports research activities processes that are knowledge confine, rescue, sharing and collaboration. The role of academicians as knowledge giver through their researches, now it is time to search the influence of organizational culture on academician's sharing research behavior. Hence, the findings of this research work will add to enhancement in academician's academic capability and improvement in colleges' knowledge sharing programs as up till now not much work has been done in India in this area. Hence the following hypothesis is proposed:

H_{2c}: Research positively influences employee willingness in knowledge sharing.

Collaboration

Collaboration is explained as the extent to which people in a group actively support and help each other in their work (Gupta and Govindarajan, 2000; Lee and Choi, 2003 & Nejatian et al., 2013). Collaborative culture is required for successful knowledge management (Hansen *et al*., 1999; Ein-Dor and Segev, 1982). Collaborative interfaces such as open conversation, social interaction, and joint actions can help to develop organizational knowledge (Hedlund, 1994). Collaboration can help people obtain a shared understanding about organization's external and

internal environments using supportive and reflective communication. Knowledge creation is highly correlated to collaboration among different organization members (Poitou, 1996). Therefore, many scholars considered collaboration as a key enabler for knowledge creation (Hansen *et al*., 1999; Graham and Pizzo, 1996; Caruana *et al*., 1998; Moon and Lee, 2014). In some universities, the culture of sharing is lacking, most activities are individualistic, and communication and collaboration between students in group is weak (Basu and Sengupta, 2007). Researcher wants to emphasize on Collaboration of different organizations such as Business schools with industries and with other universities at both national and international level, to share knowledge and research to encourage Innovation in higher education in India. Thus the following hypothesis is proposed:

H_{2d}: Collaboration positively influences employee willingness to share knowledge.

(iii) Technological factors

Information and Communication Technology (ICT) Use

Knowledge-sharing processes having Technology factors as determinant Information and communication technology (ICT) use and knowledge sharing are closely connected, because ICT can facilitate quick access, search and retrieval of information, and can maintain communication and collaboration between organizational employees (Huysman and Wulf, 2006). The use of ICT development make possible new methods and applications (such as, online databases, virtual communities, intranet, groupware, etc.), within knowledge sharing, and permit firms to increase available social networks by crossing geographical boundaries and thus getting more effective collaborative activities (Pan and Leidner, 2003). Furthermore, Zack (1999) believes that ICT plays the following three different roles in knowledge management activities:

(1) Acquiring knowledge.
(2) Defining, keeping, classifying, indexing, and connecting knowledge-related digital items.
(3) Seeking and recognizing related content.

Moreover, according to Yeh et al. (2006), effective knowledge management needs employees to share their knowledge through ICT facilities, because ICT can link communication channels for collecting knowledge, correcting flow processes, and recognizing the location of knowledge keepers and requesters. Hence, the following hypothesis is proposed:

H_3: Use of information and communication technology positively influences Knowledge sharing.

3.4. Knowledge Sharing and Institutional Performance

According to Calantone et al. (2002); Scarbrough, (2003), A number of studies have expressed that knowledge sharing is crucial because it facilitates organizations to boost innovation performance and trim down unnecessary learning efforts (Cited in Lin, 2007).

Stocking up the knowledge is not new in universities but knowledge sharing and using it among academicians and students is new (Keramati and Azadeh, 2007). Competitive advantage can be gain by academic institutions through Knowledge management. Studies analyzing universities in Asia have founded that as in the business environment knowledge sharing has similar barriers in the academic environment **(**Khosravi and Ahmad, 2013).The research performed in an education institution by Yue Wah *et al.* (2007) in Singapore showed with its results that the cost benefit concerns of knowledge hoarding and rewards, open-mindedness of the sharer, and incentives impact on knowledge sharing strongly in comparison to organizational care or pro-social motives. Research conducted by Abdullah *et al.* (2009) in various main universities in Malaysia, showed that rewards and suitable incentives are important factors to improve knowledge sharing and motivate academics. Zhao (2003) argued that use of knowledge sharing approach in research supervision improves the quality of the research supervision process and leads to improve scholars' research skills. Zhao looked at the retention rate in educational programs such as the student progress rate and completion rates and found that knowledge sharing improves them. A quantitative study was done by Rhodes *et al.* (2008) and showed that knowledge sharing in an organization can enhance innovation and organizational performance.

Table 2: Synthesized Matrix of Literature Review

S.No.	Paper Author	Individual Factors				Organizational Factors					Tech Fact	Knowledge Sharing	Performance
		Individual Factors	Cooperative Behavior	T-Shaped Skills	Self Efficacy	**Organizational Factors**	Top Mgmt Support	Organizational Rewards	Research	Collaboration	ICT Use		
1	Cummings and Teng (2003)					√			√		√	√	
2	Lee and Choi (2003)			√						√	√	√	√
3	Lin (2006)		√		√			√				√	
4	Singh, Chan and McKeen (2006)	√									√	√	√
5	Tsui et al. (2006)	√				√	√			√	√	√	
6	Zhang, Faerman and Cresswell (2006)					√		√			√	√	
7	Lin (2007)	√	√		√	√	√	√			√	√	
8	Alwai, Marzooqi and Mohammed (2007)					√		√			√	√	
9	Cheng, Ho and Lau (2008)	√				√			√		√	√	
10	Lin, Lee and Wang (2008)		√		√	√	√				√	√	
11	Tohidinia and Mosakhani (2009)				√	√		√			√	√	
12	Hung and Chuang (2010)		√		√			√				√	
13	Worasincha and Bechina (2010)					√		√		√	√	√	
14	Akram et. al. (2011)					√				√	√	√	

15	Noor and Salim (2011)	√	√			√		√			√	√	
16	Rahab, Sulistyandari and Sudjono (2011)	√	√		√	√	√	√			√	√	
17	Bansemir, Neyer and Moslein (2012)	√			√						√	√	
18	Corcoles (2012)		√									√	
19	Khalil and Divine (2012)	√	√			√	√	√			√	√	
20	Long, Ghazali and Heng (2012)					√	√	√				√	
21	Noor and Salim (2012)	√	√			√	√				√	√	√
22	Othman and Siew (2012)	√	√		√	√	√	√			√	√	
23	Rasula, Vuksic and Stemberger (2012)					√					√	√	√
24	Aliakbar, Yusoff and Moghaddam (2013)				√							√	
25	Aris (2013)	√				√	√	√			√	√	
26	Kanaan, Masadeh and Gharibeh (2013)		√		√		√	√			√	√	
27	Khosravi and Ahmad (2013)	√				√			√		√	√	
28	Nejatian et. al (2013)			√						√	√	√	
29	Sliat and Alnsour (2013)	√	√		√	√	√	√				√	
30	Yassin, Salim and Sahari (2013)					√	√	√			√	√	
31	Berraies, Chaher and Benyahia (2014)			√		√		√		√	√	√	√
32	Hasanzadeh, Sarkari and Hasiri (2014)	√				√					√	√	
33	Hejase et. al. (2014)	√	√		√	√	√	√			√	√	√
34	Islam and Khan (2014)	√	√			√					√	√	
35	Khosravi, Ahmad and Sedera (2014)	√				√	√		√		√	√	
36	Moon and Lee (2014)	√				√				√		√	

There is not any knowledge sharing framework that discovers the important aspects of knowledge sharing in research which can assist knowledge sharing in the research and guide Business schools and their teaching staff to support knowledge sharing in management colleges to enhance the institutional performance in India. Knowledge sharing in the research and in colleges is therefore an important research area that needs more attention especially in India because no study has been conducted yet on this. The present study examines the effects of knowledge sharing on Institutional performance. Thus the following hypothesis is proposed:

H_4: Employee willingness to share knowledge within the organization positively influences institutional performance.

4. Parameters to Measure Institutional Performance

Researcher in this study will examine the factors or say knowledge enablers can influence knowledge sharing and impact of knowledge sharing on performance of Business schools of India. Researcher will use five point Likert Scale to measure the parameters In order to measure the institutional performance researcher identified some parameters after observing the methodology opted by the three organizations (Businesstoday, Businessworld and topbschoolsinindia.com) to rank the B- schools of India. These parameters are:

Teaching: The learning environment
Research: volume and reputation
Citations: Research impact
Innovation
International Outlook
Student placement

5. Need of the Study

Today, India has the largest higher education system in the world in terms of the number of institutions. It is the second-largest in terms of enrollment. While India has shown impressive growth in the number of institutes and enrollment, with 25.9 million students enrolled in more than 45,000 degree and diploma institutions in the country. It has witnessed particularly high growth in the last decade, with enrollment of students increasing at a CAGR (compound annual growth rate) of 10.8% and institutions at a CAGR of 9%. The Eleventh Plan saw nine fold increases in the public spend on higher education which fueled significant inclusive expansion in the public higher education sector, it still faces challenges on several fronts including low and inequitable access to higher education, shortage of faculty, deficient infrastructure as well as low-quality and inadequate research. However, there has been no significant improvement in terms of quality of higher education delivery. The issues of skill gaps, skill shortages and unemployable graduates still persist. This brings in concerns that students are getting degrees, but not getting employable hands-on skill". The quality of students can at least partly be the reflection of performance of a teacher. Thus, after keeping in mind the deteriorated quality of qualified graduates in India, it is probable that, performance of teaching staff in Business schools is below par. Previous researches have shown that knowledge sharing behavior among academics in Business schools of India and organizational climate factors affecting willingness to share knowledge, classified as individual, institutional and technological factors, in organizations is a major reason for degraded performance of employees and to get a competitive advantage the Business schools with their faculties need to be increase the level of sharing knowledge in the organization to improve their performance. Thus there is a need to find out the influence of factors of organizational climate to increase the knowledge sharing level which can be favorable in order to enhance the performance of teaching employees of Management Colleges of India.

Previous studies have identified so many factors which affect the knowledge transfer in organization and the performance of employees but no such study is yet conducted for higher education system of India. The present study will examine the influence of organizational climate, classified as individual, organizational and technological factors to engage in knowledge sharing processes and whether more leads to superior Business school Performance.

6. Objectives of the Study

The proposed study has the following objectives:

- To find out the relationship between individual factors and knowledge sharing.
- To identify the relationship between Organizational factors with knowledge sharing.
- To find out the relationship between technological factors and knowledge sharing.
- To find out the relationship between knowledge sharing and Institutional performance.
- To develop and recommend a framework model of relationship between knowledge sharing and institutional performance.

6. Conceptual Framework and Methodology

The objectives and hypotheses of the study are based on the conceptual framework of relationship between factors or knowledge enablers and knowledge sharing & impact on Performance as shown in figure: 3 the researcher has derived this framework from Model of Knowledge sharing developed by Hsiu-Fen Lin (2007). The framework shows the relationship between factors of knowledge enablers, knowledge sharing process and innovation capability of organization.

In this proposed research, the researcher shall carry out the research on the basis of the suggested framework as presented in Figure.4 some modifications have been made by the researcher in the original framework in terms of introducing the specific factors in context of proposed research problem to be studied by the researcher. The researcher has introduced the factors such as T-Shaped skills, Research, Collaboration and Institutional Performance as an outcome. The model will examine the influence of knowledge enablers on Knowledge sharing and finally the impact of Knowledge sharing on Institutional Performance.

6.1. Methodology

This research work shall be a descriptive research study based on survey technique. In order to make study more reliable, data from both primary and secondary sources will be collected. The primary data will be collected from the selected study sample, using the appropriate sampling

techniques followed by the analysis of the results through use of appropriate statistical tools to draw logical inferences and valid conclusion of the research.

6.2. Hypotheses

The following hypotheses can be drawn from the above review of literature:

H_1: Individual factors positively influence employee willingness to Knowledge Sharing.

- **H_{1a}**: Co-operative behavior positively influences employee willingness to share knowledge.
- **H_{1b}**: T -Shaped skill positively influences employees to share knowledge.
- **H_{1c}**: Knowledge self-efficacy positively influences employee willingness to share knowledge.

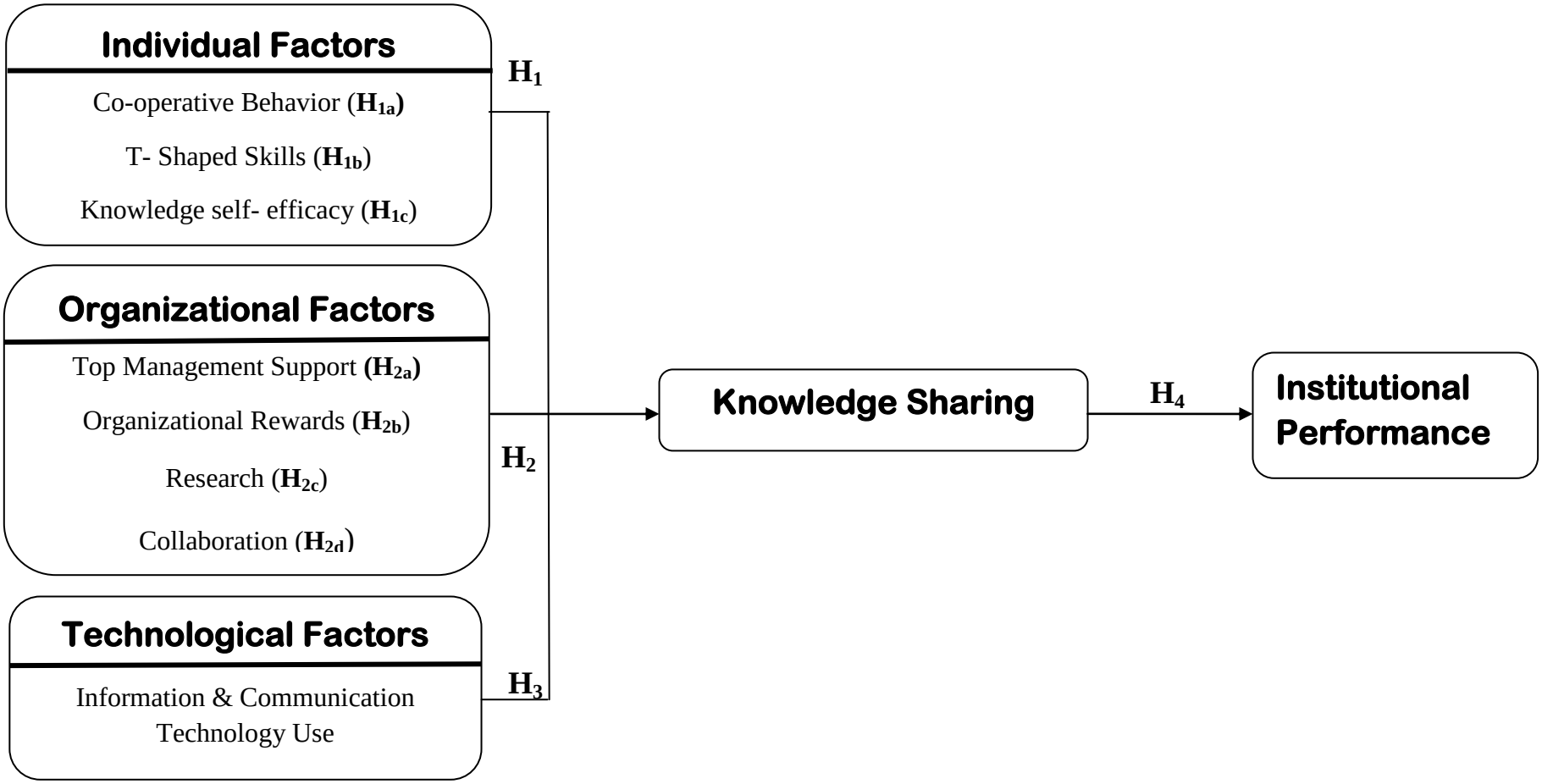
H_2: Organizational factors positively influence employee's willingness to share knowledge.

- **H_{2a}**: Top management support positively influences employee willingness to share knowledge.
- **H_{2b}**: Organizational rewards positively influence employee willingness in knowledge sharing.
- **H_{2c}**: Research positively influences employee willingness in knowledge sharing.
- **H_{2d}:** Collaboration positively influences employee willingness to share knowledge.

H_3: Use of information and communication technology positively influences Knowledge sharing.

H_4: Employee willingness to share knowledge within the organization positively influences institutional performance.

Figure-4: Conceptual Framework of Knowledge Sharing and Institutional Performance



Source: Conceptual Framework Developed by the Researcher

6.3. Scope of the Study

In order to collect data, researcher will select Delhi and NCR as the area for study and among top 10 Business schools data will be collected from any six colleges. Faculty (**Teaching**) members of the Business schools will be the respondents for the study which include **Professors, Associate Professors and Assistant Professors.**

6.4. Sampling Design

A good sample is true representative of the population. For the purpose of this study, **Judgmental or Purposive Sampling** (non-probability sampling) will be used to draw appropriate representative sample from the population (Figure: 5). Judgmental sampling will be used as, according to prestigious magazines and survey of India, top 100 Business school rankings published in 2013, by groups like Business today, Business world and topbschoolsinIndia.com, 32 colleges are from north India and most of them are from Delhi and NCR. Therefore researcher will take Delhi and NCR as the area for study, data will be collected from academic staff of top 10 Business schools.

6.5. Calculation of Sample Size

Based on calculation of sample size (refer Appendix), the preliminary sample size without finite population correction factor is computed to be 306.

Since the calculated sample size is higher than 10% of total population (Figure: 6), sample size after considering finite population correction factor (Malhotra, 2011) is calculated by following formula:

$$n = \frac{n_0 \times N}{n_0 + (N - 1)}$$

Here, n= Sample size after considering finite population correction factor

n0 = sample size without considering finite population correction factor

N = size of population

Since, $n_0 = 306$

$N = 464$

By applying the above formula,

$n = 184.63$

The final sample size after considering finite population correction factor is computed to be **184.** The sample size is distributed between all 10 Business Colleges and the distribution is as follows (Table: 4)

Figure: 5 Chart of Sampling Techniques

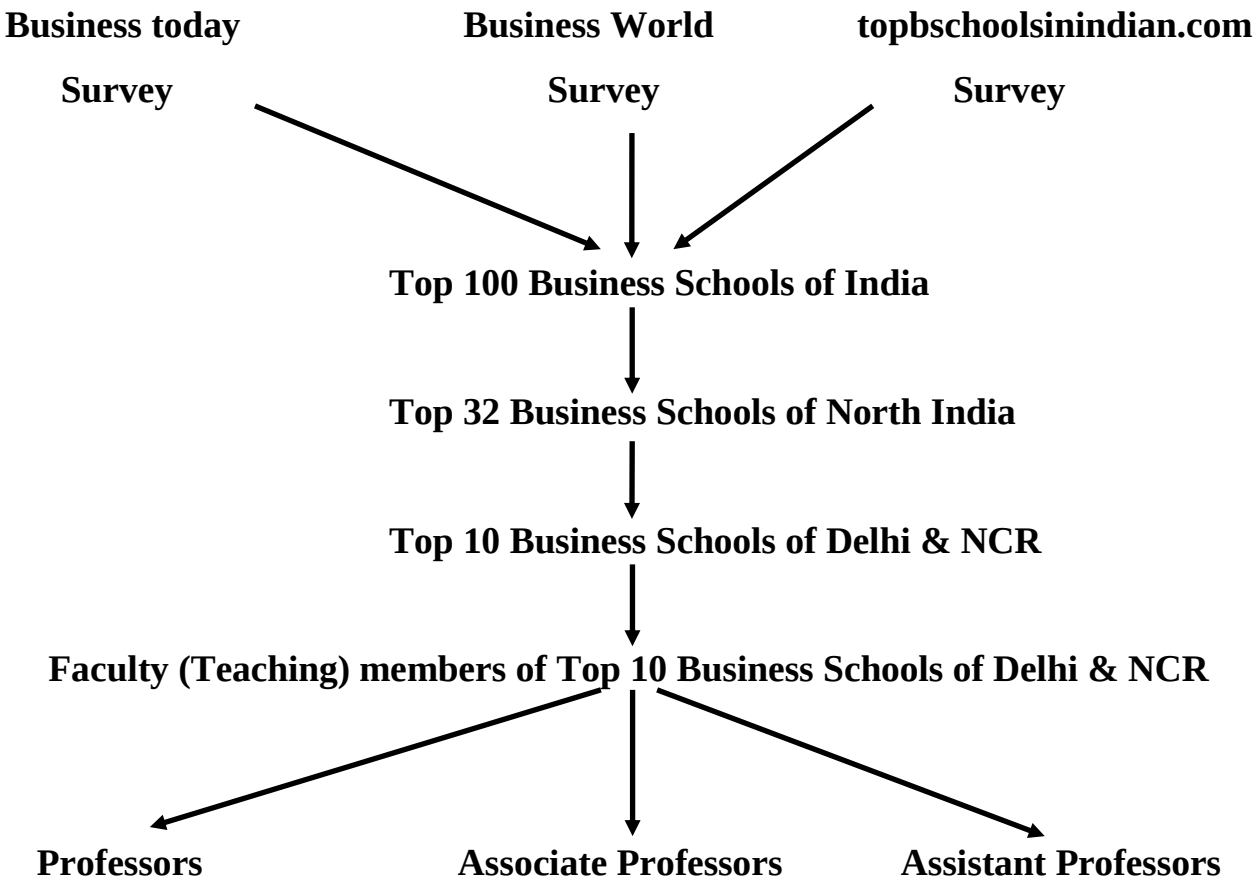
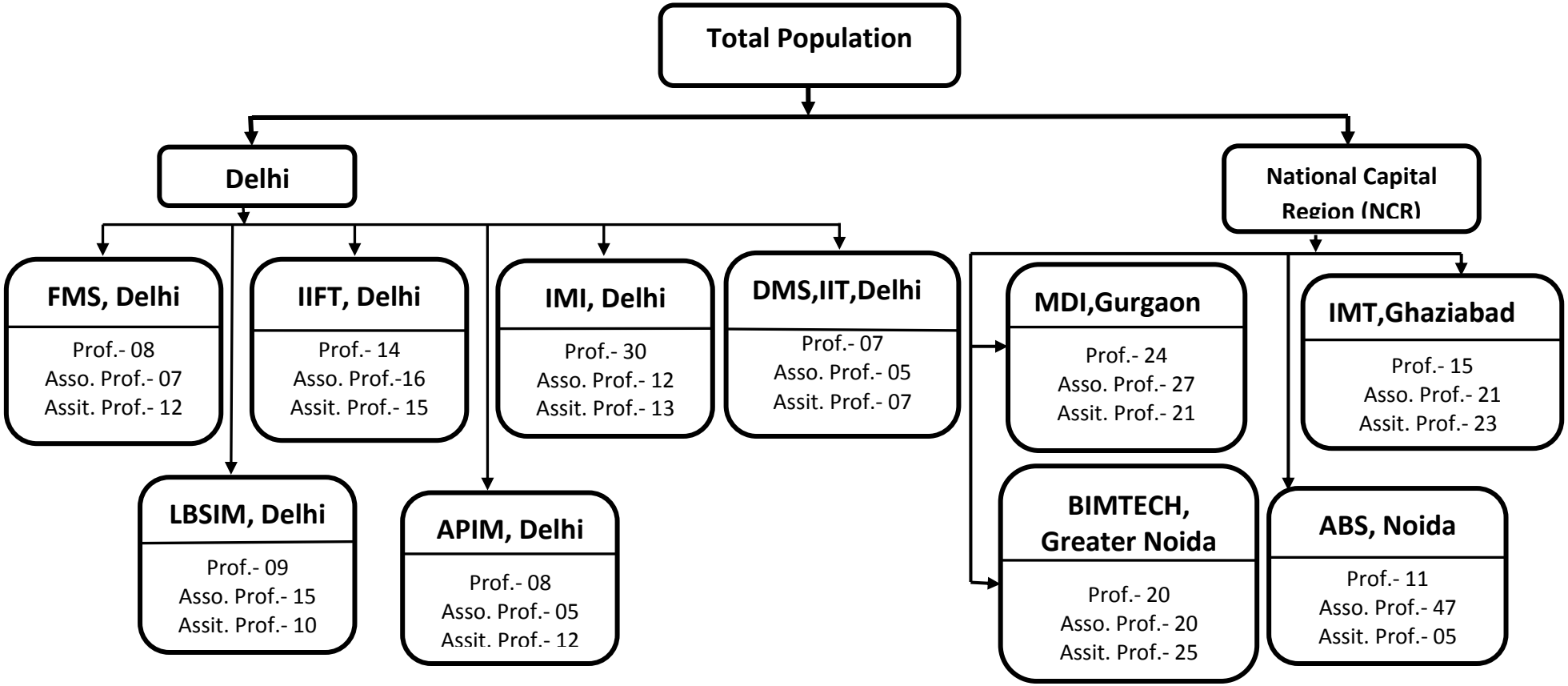

Business today Survey
Business World Survey
topbschoolsinindian.com Survey
Top 100 Business Schools of India
Top 32 Business Schools of North India
Top 10 Business Schools of Delhi & NCR
Faculty (Teaching) members of Top 10 Business Schools of Delhi & NCR
Professors
Associate Professors
Assistant Professors

Figure: 6 Total population and sample size determination



Source**:** *http://fms.edu/?q=faculty/directory_page, http://edu.iift.ac.in/iift/allfaculty.php, http://www.imi.edu/delhi/faculty_list, http://dms.iitd.ac.in/permanent.html, http://www.lbsim.ac.in/faculty.aspx?mpgid=75&pgidtrail=75&deptid=15, http://www.asiapacific.edu/faculty-profiles, http://www.mdi.ac.in/faculty/show-faculty.html, http://www.imt.edu/FacultyandResearch/Faculty.aspx, http://bimtech.ac.in/faculty/faculty-directory/, http://www.amity.edu/abs/ABS_Faculties.ap.*

Table 4: ***Number of faculty members and their designations of top 10 Business Schools of Delhi and NCR**

	Business School Name	**Faculty (Teaching Staff) Designations** Sample Size (Total Population)		
		Professor	**Associate Professor**	**Assistant Professor**
Delhi	FMS, Delhi	03 (08)	03 (07)	05 (12)
	IIFT, Delhi	05 (14)	06 (16)	06 (15)
	IMI, Delhi	12 (30)	05 (12)	05 (13)
	DMS, IIT, Delhi	04 (07)	02 (05)	03 (07)
	LBSIM, Delhi	04 (09)	06 (15)	03 (10)
	APIM, Delhi	03 (08)	02 (05)	05 (12)
National Capital Region (NCR)	MDI, Gurgaon	10 (24)	11 (27)	08 (21)
	IMT, Ghaziabad	06 (15)	07 (21)	09 (23)
	BIMTECH, Greater Noida	08 (20)	08 (20)	10 (25)
	Amity Business School, Noida	04 (11)	19 (47)	02 (05)
	Total 184 (464)	59 (146)	69 (175)	56 (143)

Source**:** *http://fms.edu/?q=faculty/directory_page, http://edu.iift.ac.in/iift/allfaculty.php, http://www.imi.edu/delhi/faculty_list, http://dms.iitd.ac.in/permanent.html, http://www.lbsim.ac.in/faculty.aspx?mpgid=75&pgidtrail=75&deptid=15, http://www.asiapacific.edu/faculty-profiles, http://www.mdi.ac.in/faculty/show-faculty.html, http://www.imt.edu/FacultyandResearch/Faculty.aspx, http://bimtech.ac.in/faculty/faculty-directory/, http://www.amity.edu/abs/ABS_Faculties.ap*

*The sample size distribution shown in the table above would be compensated against other colleges in case of no response from any other college.

6.7. Sources of Data Collection

To determine the objectives of the proposed study, data will be collected from both primary as well as secondary sources.

6.7.1. Primary Data

To fulfill the objectives and test hypotheses, primary data will be collected from Professors, Associate Professors and Assistant Professors of various Business schools with help of structured questionnaires and personal interviews. Before preparing a questionnaire few target respondents will be interviewed. Thereafter, a structured questionnaire will be prepared which will be exposed to a pilot test to check its reliability. Any factor which would be felt necessary will be made in the final questionnaire before administering it to all respondents.

6.7.2. Secondary Data

Secondary data will provide the information and facts about the colleges and the influence of individual, institutional and technological factors on knowledge sharing & institutional performance in public and private Business schools. Secondary data, for the study will be collected from sources like Magazines (Business Today, Business World and Outlook etc.), Newspapers such as The Hindu etc.), Websites, Books, Journals, Published work and Unpublished work etc.

6.8. Statistical Tools

To test the given hypotheses and survey findings scientifically, researcher is keen to analyze the data by using appropriate statistical tools like, correlation, descriptive statistics etc. In order to find out, which factors have the major impact on knowledge sharing second order partial correlation will be used.

7. Managerial Implications of the Study

India is the world's third larger producer of graduates in a year but only 15 percent of these graduates have employable skills on hands. The deteriorated quality of students partly reflects the degradation in quality of teaching staff in colleges. Factors that influence Knowledge Sharing in an organization and Knowledge Sharing process are

empirically proved to be the major reasons for reduction in quality of teaching staff's job performance. The study will be helpful in analyzing the performance of teaching staff in selected Business schools of India. This study will provide a clue regarding how Business schools can promote knowledge sharing culture among teaching staff to sustain their performance. The study will also identify individual factors such as Cooperative behavior, T- Shaped skills and Self efficacy of employees influencing knowledge sharing and institutional performance and at the same time it will deal with various organizational factors like Top Management Support, Organizational rewards, Research and Collaboration and technological factors, ICT use, influence on Knowledge sharing and performance of the colleges thus enabling the selected colleges to control those factors which are contributing in increasing the behavior of knowledge sharing which will ultimately result in increment in favorable outcomes like innovation, research and better performance. This will improve the quality of performance of teaching staff in Business schools, which will further enhance the quality of higher education system of India.

8. Proposed Chapterization

The structure of the proposed study will be as follows:

Chapter1. Introduction

Chapter2. Review of Literature

Chapter3. Profile of top 10 B-Schools of Delhi & NCR

Chapter4. Research Methodology

Chapter5. Analysis and Results

Chapter6. Conclusion and Suggestions

References

Abdullah, S., (2012), The Impact of Knowledge Sharing on Innovation Capability in United Arab Emirates Organizations. *World Academy of Science, Engineering and Technology*, 12-23.

Akarm, K., (2011), Role of Knowledge Management to Bring Innovation: An Integrated Approach. *International Bulletin of Business Administration,* ISSN: 1451-243X (11), 121-134.

Alawl, A.I. (2007), Organizational Culture and Knowledge Sharing: Critical Success Factors. *Journal of Knowledge Management,* 11 (2), 22-42.

Aliakbar, E., (2013), A Review of Factors Influencing Knowledge Sharing Behavior Among Virtual Communities. *International Journal of Business and Marketing.*

Aris, A. Z. (2013), Requirement for Knowledge Sharing Behavior: A Review of Imperial Findings. *Journal of Asian Science Research,* 3(6), 517-526.

Berraies, S., (2014), Knowledge Management Enablers, Knowledge Creation Process and Innovation Performance: An Empirical Study in Tunisian Information and Communication Technologies Sector. *Business Management and Strategy,* ISSN 2157-6068, 5(1), 1-26.

Businesstoday, (Oct.2013). Retrieved Sep20, 2014, From www.businesstoday.intoday.in: www.businesstoday.intoday.in/bschools/summeary-ranking.jsp.

Cheng, M., Y., (2008), Knowledge Sharing in Academic Institutions: A study of Multimedia University Malaysia: *Electronic Journal of Knowledge Management,* ISSN 1479-4411, 7(3), 313-324.

Cummings, J.L.,(2003), Transferring R&D Knowledge: The Key Factors accessing Knowledge Transfer Success. *Journal of Engineering and Technology Management,* 39-68.

Fadillah Yassin, J.S., (2013), Te Influence of Organizational Factors on Knowledge Sharing. *The Fourth International Conference of Electrical Engineering and Informatics (ICEEI 2013)* . 272-280, Malaysia: Elsevier Ltd.

Hasanzadesh, S., (2014), Evaluation of Organizational Factors Affecting Knowledge Sharing in Work Teams. *Indian Journal of Science and Research.* ISSN: 0976-2876(print), ISSN: 2250-0138 (Online), 4(6), 259-263.

Hejase, H.J., (2014), Knowledge Sharing: Assessment of Factors Accessing Employee's Motivation and Behavior in Lebanese Organizations. *Journal of Science Research and Reports,* 12 (3), 159-1593.

Hung, Y.C., (2010), Factors Affecting Knowledge Sharing Behavior: A Content Analysis of Empirical Findings. *Journal of Knowledge Management,* 1-8.

Islam, M.S., (2014), Exploring the Factors Accessing Knowledge Sharing Practices in Dhaka University Library. *Library Philosophy and Practice (e-ournal).*

Kannan, R., (Aug 2013), The Impact of Knowledge Sharing Enablers on Knowledge Sharing Capability: An Empirical Study on Jordanian Telecommunication Firms. *European Science Journal,* ISSN: 1857-7881 (print) e-ISSN: 1857-7431, 9(22), 237-258.

Khosravi, A., (2014), Antecedent Factors of Knowledge Sharing in Research Supervision. *International Journal of Knowledge Management,* 1-15.

Khosravi, A., (March 2013), Knowledge Sharing Framework For Research Supervision. *International Journal of Scientific Knowledge.* ISSN: 2305-1493,2,10-23.

Lee, H., (2003), Knowledge Management Enablers, Process and Organizational Performance: An Integrative View and Empirical Examination .*Journal of Management Information System,* 20(1),179-228.

Lee, H.M., (2014), The Mediating Effect of Knowledge Sharing Process on Organizational Cultural Factors and Knowledge Management Effectiveness. *Performance Improvement quarterly,* 26(4), 25-52.

Lin, H.F., (2006), Effects of Extrinsic and Intrinsic Motivation on Employee Knowledge Sharing Intentions. *Journal Information Sciences,* 33(2), 135-149.

Lin, H.F., (July 2008), Evaluation of Factors in fencing Knowledge Sharing Based on Fuzzy AHP Approach. *Journal of Information Science.* 25-44.

Lin, H.F., (2007), Knowledge Sharing and Firm's Innovation Capability: An Empirical Study. *International Journal of Manpower.* 38, 315-332.

Lopis-Coecoles, O., (2012), Revising the Link Between Corporative climate and Knowledge Sharing Behavior: The Role of Job Autonomy and Intrinsic Motivation. *DRUID Society Conference2012.* Denmark: DRUIM Society.

Long, C.S., (2012), The Relationship Between Knowledge Sharing Culture and Innovation Capability: A Proposed Model. *Journal of Basic and Applied Science Research,* ISSN2090-4304, 2(9), 9558-9562.

Magzine, Business World, (2013, July 15), *Surveys, Overall Ranking* .Retrieved Aug30, 2014, From www.businessworld.in: http:// www.businessworld.in/news/b-school/surveys/overall-rankings-1/955915/page-1.html.

Nejatian, M., (2013), Critical Enablers for Knowledge Creation Process: Synthesizing the Literature. *Global Business and Management Research: An International Journal,* 105-119.

Neyer, A.K., (2012), Knowledge Exchange in Intra-Organizational Innovational Communities: The Role of Cognitive Affective states. Official Open Access Journal of VHB, 5(1), 43-58.

Noor, N.M., (July 2011), Factors Influencing Employee Knowledge Sharing Capabilities in Electronic Government Agencies in Malaysia. *IJCSI international Journal of Computer Science, Issue*, ISSN: (Online): 1694-0814, 8(4),106-114.

Noor, N.M., (2012), The Influence of Theories of Factors Affecting Knowledge Sharing and Its Relationships with Innovation and Organizational Performance. *Knowledge Management International Conference (KMICe) 2012*, 509-514, Malaysia.

Othman, S.Z., (Mar 2012), Sharing Knowledge Through Organization's Blogs: The Role of Organization, Individual and Technology. 3rd International Conference on Business and Economic Research (3rd ICBER 2012) Proceedings ISBN: 978-967-5705-05-2, 562-581. Bandung, Indonesia: www.internationalconference.com.my.

Paghaleh, M.J., (2011), Importance of Knowledge Management in Research and Development Process. *Business Management Dynamics*, 1(3), 13-16.

Rahab, J., (2012), The Development of Innovation Capability of Small Medium Enterprises Through Knowledge Sharing Process: An Empirical Study Of Indonesian Creative Industry. *International Journal of Business and Social Sciences.* 2(21), 112-123.

Rasula, J., (2012), The Impact of Knowledge Management on Organizational Performance. *Economic and Business Review,* 147-168.

Singh, S.& Y.E., (2006), Knowledge Management Capability and Organization Performance: A Theoretical Foundation .*OLKC2006 Conference at the University of Warwick, (*p- 1-54). Canada.

Sliat, R.K., (2013), Business Innovation through Knowledge Sharing: An Applied Study on the Jordanion Mobile Telecommunication Sector. *European Journal of Business and Management*: www.iiste.org. 5 (18).

Tohidinia, Z., (Dec 2009), Knowledge Sharing Behavior and Its Predictors. *Industrial Management and Data Systems.*611-631.

Top b schools in India(2014), Retrieved 2014 from www.topbschoolsinindia.com: www.topbschoolsinindia.com/top-100-b-schools-in-india-2014-an-overall-ranking

Tsui, L., (2006), A handbook on Knowledge Sharing: Strategies and Recommendations for Researchers, Policymakers and Service Providers. Alberta: Community- University Partnership.

Worasinchai, L., (2010)., The Role of Multicorporations (MNC's) in Developing R&D In Thailand: The Knowledge Flow Between MNC's and University .*Electronic Journal of Knowledge Management*, ISSN 1479-4411, 8(1), 171-180.

Zhang, J., (2006), The Effect of Organizational/ Technological Factors and Nature of Knowledge on Knowledge Sharing. 39th *International Conference on System Sciences-2006.* 1-10. Hawaii: IEEE.

Appendix

Calculation of Sample Size

For calculating sample size of finite population, first of all, sample size, is to be calculated without considering finite population correction factor. To calculate the sample size without considering finite population correction factor (Malhotra, 2011), the following formula is used:

$$n_0 = \frac{\sigma^2 \times Z^2}{D^2}$$

Here, n_0 = Sample size without considering finite population correction factor

σ = Standard Deviation

Z = Standard normal distribution for 95% confidence level equivalent to 1.96 and,

D = Degree of precision desired

In order to obtain a representative and realistic sample size, the results of sample size from 3 scenarios are compared:

Scenario 1- Estimating a low standard deviation and low degree of precision.

Scenario 2- Estimating a moderate standard deviation and moderate degree of precision.

Scenario 3- Estimating a high standard deviation and high degree of precision.

The results are summarized in Table:

Table: Comparative Analysis Taking Different Values of σ and D.

	SD (σ)	**Z**	**D**	**n_0**
Scenario 1	0.23	1.96	0.04	127
Scenario 2	0.67	1.96	0.05	689
Scenario 3	0.87	1.96	0.17	101
Total				917
Average				306

Taking an average of the all the three scenarios, considered taking different values of σ and D, sample size without considering finite population correction factor is computed to be 306.

Adjusting the statistically determined sample size

To achieve the final sample size, a much greater number of potential respondents have to be contacted. The initial sample size has to be much larger because typically the incidence rates and completion rates are less than 100% (Malhotra, 2011).

For this purpose additional criteria for qualifying respondents (based on a Screening Questionnaire) is taken into consideration to determine incidence rate, completion rate and finally the expected total number of contacts (Malhotra, 2011)

The **incidence rate and completion rate are expected to be 0.86 and 0.7 respectively** (to be verified based on a Screening Questionnaire) and final sample size is 184. The calculation of initial sample size by using formula:

$$\textbf{Total number of contacts} = \frac{\textbf{Sample size (with Finite Population Correction factor)}}{\textbf{Incidence Rate X Completion Rate}}$$

Thus the expected total number of contacts is computed to be 309**.**

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